Index to Volume 12, 1991

Author/Title Index

Adrian, R. J.: *See* Merati, P., 315
Antonopoulos, K. A.: *See* Kouremenos, D. A., 137

Bakhtar, F. and So, K. S.: A study of nucleating flow of steam in a cascade of supersonic blading by the time-marching method, 54
Bejan, A.: *See* Fowler, A. J., 375; Lage, J. L., 184; Lage, J. L., 46
Bieszk, H.: *See* Lewandowski, W. M., 92

Cao, W. Z. and Poulikakos, D.: Experiments on the transient freezing of water in an inclined rectangular cavity, 116
Chappidi, P. R., Pasamehmetoglu, K. O. and Gunnerson, F. S.: The influence of surface radiation on laminar forced-convection film boiling, 225
Chen, C.-K.: *See* Chen, T.-M., 29
Chen, L.-T.: Two-dimensional fin efficiency with combined heat and mass transfer between water-wetted fin surface and moving moist airstream, 71
Chen, T.-M. and Chen, C.-K.: Analysis of the conjugate transient natural convection-conduction heat transfer of a fin array in a cavity, 29
Chiang, H. and Kleinstreuer, C.: Convection heat transfer of colinear interacting droplets with surface mass transfer, 233
Chou, F. C.: *See* Lin, J. N., 218
Cieśliński, J.: *See* Lewandowski, W. M., 92
Corticelli, M. A.: *See* Spiga, M., 179

Dhir, V. K.: Nucleate and transition boiling heat transfer under pool and external flow conditions, 290
Dong, Z. F. and Ebadian, M. A.: A numerical analysis of thermally developing flow in elliptic ducts with internal fins, 166
Dutra, A. S., Souza Mendes, P. R. and Parise, J. A. R.: Transport coefficients for laminar and turbulent flow through a four-cusp channel, 99

Ebadian, M. A.: *See* Dong, Z. F., 166; Yang, G., 202

Farthing, P. R. and Owen, J. M.: De-swirled radial inflow in a rotating cavity, 63
Fowler, A. J. and Bejan, A.: The effect of shrinkage on the cooking of meat, 375

Gato, L. M. C.: *See* Morgado, F. T. F., 150
Georgiadis, J.: *See* Lage, J. L., 184
Gersten, K., Grobel, M., Klick, H. and Merzkirch, W.: Flow separation in laminar natural convection, 331
Gregory-Smith, D. G. and Hawkins, M. J.: The development of an axisymmetric curved turbulent wall jet, 323
Grobel, M.: *See* Gersten, K., 331
Gunnerson, F. S.: *See* Chappidi, P. R., 225

Hawkins, M. J.: *See* Gregory-Smith, D. G., 323
Hsiao, K.-L.: *See* Liou, T.-M., 210
Hu, Z. G., Tsai, Y. N. and Sheng, D. R.: Measurement of droplet size distribution in a two-phase medium by optimized method of laser scattering, 85
Huang, C.-C.: *See* Su, C.-C., 273
Huang, C. H. and Ozisik, M. N.: Optimal regularization method to determine the strength of a plane surface heat source, 173
Humphrey, J. A. C.: *See* Tzeng, H.-M., 194
Hung, C.-I. and Perng, Y.-Y.: Flow of non-Newtonian fluid in the entrance region of a tube with porous walls, 263

Iacovides, H. and Theofanopoulos, I. P.: Turbulence modeling of axisymmetric flow inside rotating cavities, 2

Kakaç, S.: *See* Padki, M. M., 240
Kida, S.: *See* Suzuki, H., 353
Kleinstreuer, C.: *See* Chiang, H., 233
Klick, H.: *See* Gersten, K., 331
Kouremenos, D. A. and Antonopoulos, K. A.: Sound velocity and isentropic exponents of real air on its compressibility chart, 137

Lage, J. L., Bejan, A. and Georgiadis, J.: On the effect of the Prandtl number on the onset of Bénard convection, 184
Lage, J. L. and Bejan, A.: Natural convection from a vertical surface covered with hair, 46
Lai, J. C. S.: The preferred mode of a tube jet, 284
Lee, T. S.: Laminar fluid and heat flow through an opened rectangular cooling chamber, 249
Lewandowski, W. M., Bieszk, H. and Cieśliński, J.: Influence of cylindrical screens on free convection heat transfer from a horizontal plate, 92
Lewis, R. I.: Free streamline and jet flows by vortex boundary integral modeling, 77
Lin, J. N., Chou, F. C. and Tzeng, P. Y.: Theoretical prediction of the onset of thermal instability in the thermal entrance region of horizontal rectangular channels, 218
Liou, T.-M., Hsiao, K.-L. and Tsai, M.-K.: Experimental and theoretical studies on turbulent mixing of two confined jets, 210
Liu, H. T.: *See* Padki, M. M., 240

MacGregor, S. A.: Air entrainment in spray jets, 279
Malarvizhi, G.: *See* Ramanaiah, G., 89
Mankbadi, R. R. and Mobark, A.: Quasi-steady turbulence modeling of unsteady flows, 122
Merati, P. and Adrian, R. J.: The interaction between a plane shear layer and a slender body, 315
Merzkirch, W.: *See* Gersten, K., 331
Mobark, A.: *See* Mankbadi, R. R., 122
Mohanty, A. K.: *See* Sahoo, K. M., 142
Mongia, H. C.: *See* Nikjooy, M., 12
Morgado, F. T. F. and Gato, L. M. C.: An integral calculation method for incompressible three-dimensional boundary layers in axisymmetric diffusers, 150

Myong, H. K.: Numerical investigation of fully developed turbulent fluid flow and heat transfer in a square duct, 344

Nakamae, T.: *See* Suzuki, H., 353
Nakayama, A. and Shenoy, A.: Turbulent free convection heat transfer to power-law fluids from arbitrary geometric configurations, 336
Nield, D. A.: The limitations of the Brinkman-Forchheimer equation in modeling flow in a saturated porous medium and at an interface, 269

Nikjooy, M. and Mongia, H. C.: A second-order modeling study of confined swirling flow, 12

Ong, C. L. and Owen, J. M.: Computation of the flow and heat transfer due to a rotating disc, 106
Owen, J. M.: *See* Farthing, P. R., 63; Ong, C. L., 106
Ozisik, M. N.: *See* Huang, C. H., 173

Padki, M. M., Liu, H. T. and Kakaç, S.: Two-phase flow pressure-drop type and thermal oscillations, 240
Parise, J. A. R.: *See* Dutra, A. S., 99
Pasamehmetoglu, K. O.: *See* Chappidi, P. R., 225
Perng, Y.-Y.: *See* Hung, C.-I., 263
Poulikakos, D.: *See* Cao, W. Z., 116

Qiu, H.-H.: *See* Sommerfeld, M., 20

Ramadhyani, S.: *See* Skok, H., 36
Ramanaiah, G. and Malarvizhi, G.: Non-Darcy axisymmetric free convection on permeable horizontal surfaces in a saturated porous medium, 89
Ro, S. T.: *See* Yoo, H., 365

Sahoo, K. M. and Mohanty, A. K.: Turbulent transport in wall subchannels and in finite rod clusters, 142
Schoenhals, R. J.: *See* Skok, H., 36
Sheng, D. R.: *See* Hu, Z. G., 85
Shenoy, A.: *See* Nakayama, A., 336
Sims, G. E.: *See* Soliman, H. M., 360
Skok, H., Ramadhyani, S. and Schoenhals, R. J.: Natural convection in a side-facing open cavity, 36
So, K. S.: *See* Bakhtar, F., 54
Soliman, H. M. and Sims, G. E.: Theoretical analysis of the onset of liquid entrainment for slots of finite width, 360
Sommerfeld, M. and Qiu, H.-H.: Detailed measurements in a swirling particulate two-phase flow by a phase-Doppler anemometer, 20
Souza Mendes, P. R.: *See* Dutra, A. S., 99
Sözen, M. and Vafai, K.: Analysis of oscillating compressible flow through a packed bed, 130
Spiga, M., Corticelli, M. A. and Trentin, M.: Exact solution to the conjugate problem of nonuniform cooling of fuel rods, 179
Su, C.-C. and Huang, C.-C.: Experimental studies of flow through single gauzes, 273
Suzuki, H., Kida, S., Nakamae, T. and Suzuki, K.: Flow and heat transfer over a backward-facing step with a cylinder mounted near its top corner, 353
Suzuki, K.: *See* Suzuki, H., 353

Theofanopoulos, I. P.: *See* Iacovides, H., 2
Trentin, M.: *See* Spiga, M., 179
Tsai, M.-K.: *See* Liou, T.-M., 210
Tsai, Y. N.: *See* Hu, Z. G., 85
Tzeng, H.-M. and Humphrey, J. A. C.: Corotating disk flow in an axisymmetric enclosure with and without a bluff body, 194
Tzeng, P. Y.: *See* Lin, J. N., 218

Vafai, K.: *See* Sözen, M., 130

Wood, N. B.: Experience with the Johnson-King turbulence model in a transonic turbine cascade flow solver, 158

Yang, G. and Ebadian, M. A.: Thermal radiation and laminar forced convection in the entrance region of a pipe with axial conduction and radiation, 202
Yoo, H. and Ro, S. T.: Melting process with solid-liquid density change and natural convection in a rectangular cavity, 365
Yoo, J. S.: Effect of fluid flow induced by a rotating disk on the freezing of fluid, 257

Keyword Index

Anisotropic k-ε model, 344
Arbitrary shape, 336
Augmentation and enhancement, 166
Axial conduction 202
Axisymmetric enclosure, 194
Axisymmetric flow, 89

Backward-facing step, 353
Bénard convection, 184
Bluff body, 194
Boundary-fitted coordinate system, 365
Boundary integral, 77
Boundary layer, 150
Brinkman, 269

Cavity flow, 29
Closely spaced droplets, 233
Coanda flow, 323
Coaxial jets, 12
Combined heat transfer, 202
Compressibility chart, 137
Compressible, 130
Compressible flow, 158, 273
Computation of wall-bounded flows, 122
Condensation, 71
Conduction, 375
Confined turbulent flow, 12
Convective heat transfer, 353
Cooling, 71
Cooling chamber, 249
Critical Rayleigh number, 184
Curved jets, 323
Cylindrical screens, 92

Dehumidification, 71
De-swirled flow, 63
Diffuser, 150
2-D eddy diffusivity, 142
Disturbing plate, 315
Double-deck theory, 331
Drift-flux model, 240

Energy storage, 130
Entrainment, 279
Entrance region, 263

Film boiling, 225
Fin efficiency, 71
Finite element solution of Navier–Stokes equations, 233
Flow boiling, 290
Flow computation, 2
Flow separation, 331
Flow-through, 249
Flow visualization, 353
Fluid dynamics, 54, 158
Fluid flow, 150
Fluid motion, 249
Food technology, 375
Forced convection, 166, 225
Forchheimer, 269
Four-cusp channel, 99
Free convection, 89, 92, 336
Free disc, 106
Free streamlines, 77
Freezing, 257
Fuel rods, 179

Gas-phase heat transfer, 233
Growth of solid, 257

Hair, 46
Heat exchangers, 166
Heat pipe and thermosyphon, 166
Heat transfer, 29, 106, 336, 344
Heat transfer augmentation, 353
Heat transfer experiment, 353
High-order boundary-layer theory, 331
Horizontal plate, 92

Impingement, 315
Incipience, 360
Inclined enclosure, 116
Insertion of cylinder, 353
Instability, 284
Insulation, 46
Interface, 269
Internal heat source determinations, 173
Inverse conductions, 173
Isentropic exponents, 137

Jet, 284
Jets, 77, 279

Laminar, 331
Laser device, 85
Laser Doppler anemometry, 323
Laser Doppler velocimeter, 353
Liquid entrainment, 360
LOCA, 99

Mach-Zehnder interferometry, 210
Materials processing, 375
Maximum heat flux, 290
Mixed convection, 218
Moments method, 202

Naphthalene sublimation technique, 99
Natural convection, 36, 46, 331
Noncoaxial jets, 210
Non-Darcy flow, 269
Non-Darcy model, 89
Non-Newtonian fluids, 336
Nonuniform cooling, 179
Nucleate boiling, 290
Nucleation, 54
Numerical methods, 166
Numerical solutions, 263

Open area ratio, 273
Open cavity, 36
Optical absorption and scattering, 85

Optimal regularization, 173
Oscillating inlet conditions, 130

Packed bed, 130
Particle size/velocity measurements, 20
Permeable surfaces, 89
Phase change, 257
Phase-change problems, 365
Plate fin, 71
Pool boiling, 290
Porous media, 89, 269
Porous walls, 263
Power-law fluids, 336
Power-law non-Newtonian fluid, 263
Prandtl number effect, 184
Prediction, 344
Preferred mode, 284
Pressure drop, 273
Pressure-drop type oscillations, 240

Radiation, 202, 225
Real air, 137
Recirculating flow, 353
Refrigerator door opening, 36
Rod cluster, 142
Rotating cavities, 2
Rotating cavity, 63
Rotating disc, 106
Rotating discs, 63
Rotating disks, 194
Rotating flow, 63, 106

Secondary flow, 344
Second-moment closures, 12
Shock-boundary-layer interaction, 158
Side-dump combustor, 210
Side slots, 360
Single gauze, 273
Slender body, 315
Solar central receivers, 36
Solid-liquid density change, 365
Sound velocity, 137
Steam turbines, 54
Stefan number, 233
Swirling flow, 12, 20

Temperature fields, 249
Theoretical prediction, 360
Thermal entrance region, 218
Thermal instability, 218
Thermal oscillations, 240
Time-marching, 54
Transient conduction, 173
Transient natural convection-conduction, 29
Transition boiling, 290
Turbulence, 2, 142, 194, 284, 344
Turbulence modeling, 122
Turbulence models, 158
Turbulent convection, 336
Turbulent jets, 323
Turbulent mixing, 210
Turbulent particle dispersion, 20
Turbulent shear layer, 315
Two-phase flow, 54, 85, 279
Two-phase flow instabilities, 240
Two-phase fluid mechanics, 233

Unsteady flows, 122

Viscosity ratio, 233
Vortex sheet, 77

Wall function, 344
Wall subchannel, 142
Water solidification, 116